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EXAMINER	
GE, YUZHEN	
ART UNIT	**PAPER NUMBER**
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/652,349	CHRISTIE, GREG	
	Examiner	Art Unit	
	Yuzhen Ge	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5,23,29 and 38* is/are allowed.

6)☒ Claim(s) *1-4,6-22,24-28,30-37 and 39-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Examiner's Remark

Applicant's amendment, filed on May 21 of 2007, has been received and entered into the file. The 101 rejections of claims 1-15 and 34-48 have been overcome in view of applicant's amendments/remarks and are hereby withdrawn.

Claim 68 is new and claims 1-68 are pending. Claims 5, 23, 29, 38 are allowable because they incorporated the allowable subject matter and are written in independent forms.

Regarding applicant's argument that Kuwata et al do not teach selecting one or more regions from an image, a new prior art is used to provide a new ground of rejection.

Regarding applicant's argument that a median is not an average, the examiner disagrees. Any college mathematical or statistical text book that teaches statistics will teach that an average can be a mean, median or mode. A mean is an average. But an average can be also a median or a mode. An average is a measure of central tendency or "middle" or "expected" values according to standard definitions. Because the claim does not specify the average is arithmetic mean, Kuwata et al and Kehtarnavaz et al teach determining one or more average.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. Claim 68 is rejected under 35 U.S.C. 102(b) as being anticipated by Kuwata et al (US Patent 6,151,410).

Regarding claim 68, Kuwata et al teach a computer readable medium encoded with an executable computer program instructions which when executed by a data processing system

cause said system to perform a method to transform an electronic image (col. 2, lines 38-55), the method comprising:

determining one or more averages of a color channel for the image by excluding one or more first pixels of the image, each of the one or more first pixels being one of: a) substantially white, and b) substantially black (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65, col. 32, lines 1-41, a median is an average and the median for each of the channels are determined), ; and

scaling color signals of the color channel for second pixels of the image according to the one or more averages, each of the second pixels being not one of: a) substantially white, and b) substantially black (col. 31, lines 1-25, col. 32, lines 1-41, the color signals are scaled based on the medians, col. 36, lines 10-55).

Claim Rejections - 35 USC § 103

2. Claims 1-4, 16-17, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwata et al (US Patent 6,151,410) in view of Kehtarnavaz et al (US Patent 7,184,080).

Regarding claim 1, Kuwata et al teach a computer readable medium encoded with a computer program instructions which when executed by a data processing system cause said system to perform a method to transform an electronic image (col. 2, lines 38-55), the method comprising:

determining one or more averages of a color channel for the image by excluding one or more first pixels of the image, each of the one or more first pixels being one of: a) substantially white, and b) substantially black (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67,

col. 27, lines 21-46, col. 30, lines 45-65, col. 32, lines 1-41, a median is an average and the median for each of the channels are determined), ; and

scaling color signals of the color channel for second pixels of the image according to the one or more averages, each of the second pixels being not one of: a) substantially white, and b) substantially black (col. 31, lines 1-25, col. 32, lines 1-41, the color signals are scaled based on the medians, col. 36, lines 10-55).

However they do not explicitly teach selecting one or more regions from the image and the determining of averages corresponds to the one or more regions. In the same field of endeavor, Kehtarnavaz et al teaches selecting one or more regions from the image and perform processing corresponding to the one or more regions (Fig. 1c, col. 10, lines 30-45, when an area is being processed, it is selected, col. 5, lines 54-61, to determine standard deviation, the average has to be determined first). It is desirable to adapt color correction to different types of photography or images which require different emphasis or weights to different areas (col. 10, lines 30-45 of Kehtarnavaz et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Kehtarnavaz et al to select one or more regions from the image and the determining of averages corresponds to the one or more regions so that different types of image can be accomodated.

Regarding claim 2, Kuwata et al and Kehtarnavaz et al teach a medium as in claim 1. Kuwata et al further teach wherein the one or more averages are determined by further excluding one or more pixels of the image each of which has at least one color component that is one of: a

maximum allowable value and a minimum allowable value (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65).

Regarding claim 3, Kuwata et al and Kehtarnavaz et al teach a medium as in claim 1. Kuwata et al further teach wherein the color channel is one of: a) red; b) green; and c) blue (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65, col. 32, lines 1-41).

Regarding claim 4, Kuwata et al and Kehtarnavaz et al teach a medium as in claim 1. Kuwata et al further teach wherein the one or more averages comprise at least two of:

a) an average for a center portion of the image (Figs. 16-18, the natural picture corresponds to the center of the image, each color components have at least one average, col. 28, lines 55-67, col. 30, lines 16-45);

b) an average for a surrounding portion of the image; and

c) an average for the image (col. 28, lines 55-67, col. 30, lines 16-45, the median is an average for the image).

Claims 16-17 are the corresponding method claims of claims 1 and 2. Claim 22 is the corresponding system claims of claim 1. Claim 28 is the corresponding image capturing device claims of claim 1. Kuwata et al teach a method, a system, and an image capturing system (title, Figs. 5, 6 and 12, Figs. 1 and 2, col. 16, lines 40-50). Thus Kuwata et al and Kehtarnavaz et al teach claims 16-17, 22, and 28 as evidently explained in the above-cited passages.

Claim Rejections - 35 USC § 103

3. Claims 1-4, 6-22, 24-28, 30-37, and 39-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (US Patent 5,294,989) in view of Zaklika et al (US Patent 7,057,768 B2), further in view of Kehtarnavaz et al (US Patent 7,184,080).

Regarding claim 1, Moore et al teach a method comprising:

determining one or more averages of a color channel for the image by excluding one or more first pixels of the image, (col. 8, lines 53-64, col. 9, lines 47-56, average of each color channel is found for each pixel); and

scaling color signals of the color channel for second pixels of the image according to the one or more averages, (col. 10, lines 26-30, col. 10, lines 55-60, col. 10, lines 10-18, col. 20, lines 3-16, col. 22, lines 20-36).

However they do not explicitly teach that the first pixels are one of a) substantially white, and b) substantially black and the second pixels are not one of a) substantially white, and b) substantially black. In the same field of endeavor, Zaklika et al teach to clip pixels that are one of a) substantially white, and b) substantially black and correcting the non-clipped pixels (col. 4, lines 51-60, col. 5, lines 1-54, col. 9, lines 1-24, col. 9, lines 26-51). It is desirable to have a color correction algorithm that is less susceptible to noise and defective pixels in digital camera and improve color balance performance under different illumination and capturing conditions (col. 1, lines 23-26, col. 1, lines 62-67, col. 2, lines 24-29, col. 2, lines 55-62, col. 3, lines 34-41, col. 3, lines 45-54 of Zaklika et al). It is also desirable to exclude the influence of black or white

frames for color correction. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Zaklika et al to exclude pixels that are one of a) substantially white, and b) substantially black and only correct those that are not excluded.

Also Zaklika et al and Moore et al do not explicitly teach selecting one or more regions from the image and the determining of averages corresponds to the one or more regions. In the same field of endeavor, Kehtarnavaz et al teaches selecting one or more regions from the image and perform processing corresponding to the one or more regions (Fig. 1c, col. 10, lines 30-45, when an area is being processed, it is selected, col. 5, lines 54-61, to determine standard deviation, the average has to be determined first). It is desirable to adapt color correction to different types of photography or images which require different emphasis or weights to different areas (col. 10, lines 30-45 of Kehtarnavaz et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Kehtarnavaz et al to select one or more regions from the image and the determining of averages corresponds to the one or more regions so that different types of image can be accommodated.

Moore et al also do not explicitly teach a computer readable medium containing executable computer program instructions which when executed by a data processing system cause said system to perform a method to transform an electronic image. Zaklika et al teach a computer assisted image method (col. 1, lines 6-10) and inherently a computer readable medium. It is desirable to make a processing method portable from a computer to another computer. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to store the processing steps of the method taught by Moore et al and Zaklika et al in a computer readable

medium, because the combination makes the processing method portable and therefore increase its application.

Regarding claim 2, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Zaklika et al further teach wherein the one or more averages are determined by further excluding one or more pixels of the image each of which has at least one color component that is one of: a maximum allowable value and a minimum allowable value (Fig. 1, col. 4, lines 38-60, col. 5, lines 1-46, col. 6, lines 1-55, col. 9, lines 1-24).

Regarding claim 3, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Moore et al further teach wherein the color channel is one of: a) red; b) green; and c) blue (col. 8, lines 53-60, col. 10, lines 1-9).

Regarding claim 4, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Moore et al further teach wherein the one or more averages comprise at least two of:

a) an average for a center portion of the image (col. 8, lines 53-63, the average for center pixel is found);

b) an average for a surrounding portion of the image (col. 8, lines 53-63, the average for pixel surrounding the center pixel is found); and c) an average for the image.

Regarding claim 6, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 4. Moore et al further teach wherein each of the color signals is scaled by the one or more

averages to generate respectively one or more signals that are weighted according to a distance to a selected point in the image (col. 8, lines 53-63).

Regarding claims 7 and 8, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Zaklika et al further teach scaling the luminance and thus each of the color signals with respect to a signal of the color channel of a selected color and the selected color is gray (col. 10, lines 50-58).

Regarding claim 9, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Moore et al further teach wherein each of the color signals is scaled further according to a distance to a selected point in the image (col. 8, lines 53-63, Fig. 4).

Regarding claim 10, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Zaklika et al further teach wherein the method further comprises: adjusting luminance levels of the second pixels back to levels before the color signals of the color channel are scaled (col. 10, lines 40-60). It is desirable to restore the appearance of the original scene illuminant (col. 10, lines 21-35 of Zaklika et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to adjusting luminance levels of the second pixels back to levels before the color signals of the color channel are scaled so that the original scene illuminant is shown.

Regarding claim 11, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 1. Zaklika et al further teach wherein the method further comprises: adjusting luminance levels of the second pixels to stretch a range of luminance levels of the second pixels to a predetermined range (col. 3, lines 12-16, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13, predetermined is in the sense that it is determined before the correction step, col. 9, lines 3-24).

Regarding claim 12, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 11. Zaklika et al further teach wherein the predetermined range is a maximum allowable range (col. 3, lines 12-40, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13, col. 9, lines 3-24)

Regarding claim 13, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 12. Zaklika et al further teach wherein the range of luminance levels of the second pixels is linearly stretched (col. 3, lines 12-40, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13).

Regarding claim 14, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 11. Zaklika et al further teach wherein the luminance levels of the second pixels are determined with equal weights for all color channels which consist red, green and blue channels (col. 10, lines 50-59).

Regarding claim 15, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 11. Moore et al further teach wherein the method further comprises: decreasing luminance levels for third pixels in a boundary region of the image according to distances of the third pixels

to a selected point in the image (col. 8, lines 53-63, the red intensity of another node that is further away from the node of interest is lowered and thus the luminance is lowered, col. 10, lines 19-30).

Claims 16-21 are the corresponding method claims of claims 1, 2, 7, 9, 10 and 11. Moore et al teach a method (col. 5, lines 49-65). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 16-21 as evidently explained in the above-cited passages.

Claims 22, 24-27 are the corresponding system claims of claims 1, 7-8, 9, 10, and 11. Moore et al teach a system (col. 6, lines 17-51). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 22 and 24-27 as evidently explained in the above-cited passages.

Claims 28 and 30-33 are the corresponding image capturing device claims of claims 1, 7, 9, 10, and 11, 14. Moore et al teach an image capturing system (Fig. 5, col. 6, lines 17-51, col. 10, lines 1-18). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 28 and 30-33 as evidently explained in the above-cited passages.

Claims 34, 36-37 and 39-48 are the corresponding broader version of claims 1, 3-4 and 6-15. Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 1, 3-4 and 6-15. Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 34, 36-37 and 39-48 as evidently explained in the above-cited passages.

Regarding claim 35, Moore et al, Zaklika et al and Kehtarnavaz et al teach a medium as in claim 34. Moore et al further teach wherein the image comprises a frame of a video stream in a video conference; and, said scaling is performed in real time for the video conference (col. 2, lines 51-55, col. 5, lines 18-39, col. 9, lines 26-31, col. 9, lines 59-64, col. 10, lines 19-23, the system in Fig. 5 or the video imaging system taught by Moore et al can be used for video conferencing).

Claims 49-54 are the corresponding method claims of claims 34, 35, 40, 42, 43, and 44. Moore et al teach a method (col. 5, lines 49-65). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 49-54 as evidently explained in the above-cited passages.

Claims 55-60 are the corresponding system claims of claims 34, 35, 40, 42, 43, and 44, 48. Moore et al teach a system (col. 6, lines 17-51). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 55-60 as evidently explained in the above-cited passages.

Claims 61-67 are the corresponding image capturing device claims of claims 34, 35, 40, 42, 43, 44 and 48. Moore et al teach an image capturing system (Fig. 5, col. 6, lines 17-51, col. 10, lines 1-18). Thus Moore et al, Zaklika et al and Kehtarnavaz et al teach claims 61-67 as evidently explained in the above-cited passages.

Allowable Subject Matter

4. Claims 5, 23, 29 and 38 are allowed. An examiner's statement of reasons for allowance is given in the previous office action and will not be repeated here.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
Art Unit 2624

WENPENG CHEN
PRIMARY EXAMINER

6/18/07